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103. A method according to claim 98 wherein a thickness of said semiconductor layer is 50 nm or less.--

REMARKS

The Examiner's Official Action dated October 6, 1999 has been received and its contents carefully noted. Filed concurrently herewith is a *Request for a Two Month Extension of Time* which extends the shortened statutory period for response to March 6, 2000. Accordingly, applicant respectfully submits that this response is being timely filed.

Claims 23-50 were pending in the present application prior to the above amendment. Claim 30 has been canceled, claims 23-29, 31-37 and 45-50 have been amended and new claims 51-103 have been added to recite additional protection to which applicant is entitled. New claims 51-103 recite claim to form an under film, a gate insulating film and amorphous silicon film of a thin film transistor by using the present invention. Accordingly, claims 23-29 and 31-103 are now pending in the present application and, for the reasons set forth in detail below, are believed to be in condition for allowance.

The present invention relates to a technique for forming a thin film by a plasma CVD method. One feature of the present invention is that the supply of discharge gas, such as hydrogen, is discontinued with supplying of the reactive gas, such as silane so as not to change a total amount of the reactive gas and the discharge gas in the chamber at the beginning of film formation. Likewise, the supply of the reactive gas is discontinued with supplying of the discharge gas so as not to change a total amount of the reactive gas and the discharge gas in the chamber at the end of film formation. This feature is supported by at least page 19, lines 15-16 of the specification. Consequently, the pressure in the chamber can be kept constant. It is advantageous that abrupt discharge, such as arc discharge, can be prevented and the film quality of a formed film is not damaged as discussed on page 12, lines 13-16 of the specification.

Paragraph 2 of the Official Action rejects claims 23-50 as indefinite. In response, the informalities noted in the Official Action have been addressed by the amendments set forth above and reconsideration in view thereof is requested.

Paragraph 3 of the Official Action rejects claims 23-50 under 35 U.S.C. § 112 as lacking support in the specification. Again, the amendments set forth above are believed to address the informalities noted in the Official Action and reconsideration is requested in view thereof.

Paragraph 4 of the Official Action asserts that claim 30 is directed to an independent or distinct invention. In response, claim 30 has been canceled and thus this objection is moot.

Paragraph 5 of the Official Action objects to the disclosure for a number of informalities. In response, the specification has been amended herewith to correct these informalities and reconsideration is requested in view thereof.

Paragraph 7 of the Official Action rejects claims 23, 25-29, 45, 47-48 and 50 as obvious based on the combination of Kozuka and Gupta. In response, the claims of the present application have been amended as described above to recite that the supply of discharge gas, such as hydrogen, is discontinued with supplying of the reactive gas, such as silane so as not to change a total amount of the reactive gas and the discharge gas in the chamber at the beginning of film formation or that the supply of the reactive gas is discontinued with supplying of the discharge gas so as not to change a total amount of the reactive gas and the discharge gas in the chamber at the end of film formation.


The Official Action appears to assert that the discharge gas, such as hydrogen in the present application, corresponds to the dilutant gas as disclosed in Kozuka. However, while the dilutant gas is necessarily used during the film formation in Kozuka, the discharge gas of the present invention is stopped when the supply of the film forming gas (reactive gas) is started. Therefore, it is respectfully submitted that Kozuka in fact teaches away from the present invention.

Also, the Official Action alleges that Gupta teaches that the inert gas stops simultaneously with start of the reactant gas in page 7, lines 1-2 of the Office Action. As the Official Action states, Gupta teaches that the flow of inert gas to the reaction chamber may be stopped and the desired reactant gas is introduced into the chamber (col. 5, lines 40-42). However, Gupta is silent on exchanging the gas so as not to change a total amount of the reactive gas and the discharge gas in the chamber as mentioned above.

For the above reasons, it is respectfully submitted that the presently pending claims are patentably distinguished over the combination of Kozuka and Gupta and favorable reconsideration in view of the amendments and remarks herein is requested.

For all of the above reasons, Applicant believes that claims 23-29 and 31-103 are now in proper condition for allowance. Accordingly, reconsideration of the pending rejections and examination of the newly submitted claim is requested. If the Examiner feels that any further discussion about this case would be beneficial or would expedite the prosecution thereof, she is invited to contact the undersigned.

Respectfully submitted,


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